

CLAIMS

1. Device for handling banknotes, comprising a transporting system, an infeeding and outfeeding unit arranged along said transporting system, which unit
5 is adapted to the infeed and outfeed of banknotes, an identifying unit arranged along said transporting system, as well as a first, second and so on to a last storage unit, being arranged along said transporting system, each one adapted to the storage of banknotes, with said device being adapted to an infeed of a banknote through said infeeding and outfeeding unit, a transportation of said banknote by
10 means of said transporting system past said identifying unit, an identification of said banknote by means of said identifying unit, a transportation of said banknote to a storage unit intended for said banknote according to said identification, as well as an infeed of said banknote to said intended storage unit from said transporting system, **characterized** in that said device comprises a central control unit,
15 adapted to communicate with a first local control unit arranged at said first storage unit, a second local control unit arranged at said second storage unit and so on to a last local control unit arranged at said last storage unit, a position sensor, as well as said identifying unit, that said central and the respective local control unit have a common synchronous apprehension of the position of said transporting system,
20 that, when said identifying unit has identified a banknote, and when the position of the banknote in said transporting system is established by said position sensor, said central control unit communicates the position of said banknote to the local control unit intended for said identified banknote, and that said intended local control unit directs the storage unit associated therewith to an infeed, being independent of other units, of said banknote from said transporting system to said storage
25 unit when the banknote reaches said intended storage unit.
2. Device according to claim 1, **characterized** in that the communication between said central control unit and intended local control unit takes place before
30 said banknote reaches said first storage unit.
3. Device according to claim 1 or 2, **characterized** in that upon an outfeed of a banknote from said device, said central control unit is adapted to communicate to the local control unit associated with the storage unit that stores said banknote

that said banknote should be fed out to said transporting system, that said local control unit directs the storage unit associated therewith to an outfeed of said banknote to said transporting system, that said banknote is transported by means of said transporting system to said infeeding and outfeeding unit, and that said infeeding and outfeeding unit feeds out said banknote from said transporting system and out of said device.

4. Device according to claim 3, **characterized** in that, if said identifying unit is incapable of identifying a fed-in banknote with a particular certainty, said banknote is transported by means of said transporting system to said infeeding and outfeeding unit, and that said infeeding and outfeeding unit feeds out said unidentified banknote from said transporting system and out of said device.

5. Device according to claim 3 or 4, **characterized** in that said infeeding and outfeeding unit is adapted to feed in each banknote that is inserted in said device to said transporting system, and to feed out each banknote from said transporting system that by means of said transporting system reaches said infeeding and outfeeding unit.

6. Device according to claims 4 and 5, **characterized** in that said transporting system reverses back said banknote past said identifying unit for at least one additional transportation past said identifying unit for identification before said identifying unit is regarded to be incapable of identifying said banknote.

7. Device according to claim 3, **characterized** in that an infeeding and outfeeding control unit, adapted to communicate with said central control unit, is arranged at said infeeding and outfeeding unit, that said infeeding and outfeeding control unit has an apprehension of the position of said transporting system that is common to and synchronous with other control units, that upon an outfeed of a banknote from said device, said central control unit is adapted to communicate to the local control unit associated with the storage unit that stores said banknote and to said infeeding and outfeeding control unit a position of said banknote in said transporting system, that said local control unit directs the storage unit associated therewith to an outfeed of said banknote to said transporting system in said posi-

tion, that said banknote is transported by means of said transporting system to said infeeding and outfeeding unit, and that said infeeding and outfeeding control unit directs said infeeding and outfeeding unit to an outfeed of said banknote from said transporting system and out of said device in said position.

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8. Device according to claim 4 and 7, **characterized** in that a banknote is permitted to be transported around a plurality of turns, and accordingly a plurality of times past said identifying unit, for identification before said identifying unit is regarded to be incapable of identifying said banknote.

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9. Device according to any one of claim 7 or 8, **characterized** in that said central control unit, upon an infeed of a banknote to said transporting system by means of said infeeding and outfeeding unit, is adapted to communicate a position of said infeed to said transporting system to said infeeding and outfeeding control unit, and that said infeeding and outfeeding control unit directs said infeeding and outfeeding unit to an infeed of said banknote into said device and to said transporting system in said position.

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10. Device according to any one of the preceding claims, **characterized** in that said central control unit comprises a central index, which comprises a record of each position associated with said transporting system, and that said index contains information about whether the respective position in the transporting system carries a banknote or not.

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11. Device according to any one of the preceding claims, **characterized** in that said transporting system is allocated positional locations of a mutual distance that in any position permits a transportation of at least a banknote being largest in physical size of the banknotes that may be present in said banknote handling.

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12. Device according to any one of the preceding claims, **characterized** in that said infeeding and outfeeding unit and the respective storing unit are adapted to an infeed and outfeed of banknotes taking place synchronously with the motion of said transporting system.

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13. Device according to any one of the preceding claims, **characterized** in that said central control unit is adapted to be able to read the apprehension of the respective local control unit, and of said ingoing and outgoing control unit upon the presence of such a one, regarding the position of said transporting system.

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14. Device according to claim 13, **characterized** in that said reading constitutes a part of a performance inspection carried out upon a stationary transporting system.

10 15. Device according to any one of the preceding claims, **characterized** in that an initiation of said device can take place by the fact that said central control unit is adapted to communicate a reference position of said transporting system to all other control units upon a stationary transporting system.

15 16. Device according to any one of the preceding claims, **characterized** in that an update of said device can take place by the fact that a current position of said transporting system is communicated to all control units upon a new position of said transporting system, that said current position can be communicated upon a transporting system in motion, and that said communication takes place
20 autonomously.

17. Device according to claims 15 and 16, **characterized** in that said central control unit is adapted to communicate the identical numerical value of the position of said transporting system to all local control units upon said initiation and said
25 update, and that said central control unit is adapted to calculate and communicate relative position readings adapted to the respective local storage unit upon the indication of the position of a banknote in said transporting system.

18. Device according to any one of the preceding claims, **characterized** in
30 that said central control unit communicates with other control units by means of a common data link having low bandwidth requirements.

19. Device according to any one of the preceding claims, **characterized** in that the respective control unit comprises an index, which is adapted to be incre-

mented in order to always represent the current position of said transporting system, that the respective index is adapted to handle positions that exceed a number of turns around said transporting system, that, when the respective index is incremented from the maximum value thereof, the respective index gets the value of 0 (zero), and that all calculations are made modulo the maximum value of the respective index + 1.

20. Device according to claims 15 and 19, **characterized** in that the instantaneous position of said transporting system in operation is communicated to the respective control unit by means of a transfer mechanism adapted to utilize two signals in quadrature, and that a third signal is used for the zero setting of the respective index upon an initiation of said device.

21. A first computer programme product, **characterized** in that said first computer programme product comprises computer programme code that, when it is executed by a computer, brings said computer to act as a central control unit associated with a device according to any one of claims 1 to 20.

22. A second computer programme product, **characterized** in that said second computer programme product comprises computer programme code that, when it is executed by a computer, brings said computer to act as a local control unit associated with a device according to any one of claims 1 to 20.

23. A third computer programme product, **characterized** in that said third computer programme product comprises computer programme code that, when it is executed by a computer, brings said computer to act as an infeeding and outfeeding control unit associated with a device according to any one of claims 7 to 20.

24. A computer-readable medium, **characterized** in that computer programme code according to any one of claims 21, 22 or 23 is stored on said computer-readable medium.
